

PCB Accumulation in Marine and Anadromous Fishes of the Puget Sound and Strait of Georgia

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Abstract

PCB concentration was measured in edible muscle tissue of adult English sole (*Pleuronectes vetulus*), demersal rockfish (*Sebastes spp.*), chinook (*Oncorhynchus tshawytscha*) and coho (*O. kisutch*) salmon and whole body concentrations of Pacific herring (*Clupea pallasii*) to determine if concentrations reflected environmental exposure from the geographic areas in which they reside. English sole from urban bays accumulated higher concentrations of PCBs than from near- or non-urban bays and concentrations in tissue and sediments were positively correlated. Highest PCB concentrations in rockfish were also observed in fish from urban bays. PCBs accumulated in older males but not in older females, who likely lose PCBs during reproduction with transfer of nutrients (lipids) to larvae. Higher PCB concentrations were also observed in Pacific herring, from the central Puget Sound basin where most of the urban bays are located, suggesting that PCBs present in discrete areas of marine sediments can be transported to the pelagic food web, distant from their source. Possible transport mechanisms include maternal transfer of PCBs from benthic feeding biota. PCBs were also detected in Pacific salmon with higher concentrations in chinook than coho. PCBs in adult coho returning to rivers in Puget Sound were highest in the central basin followed by the southern and northern basins.